



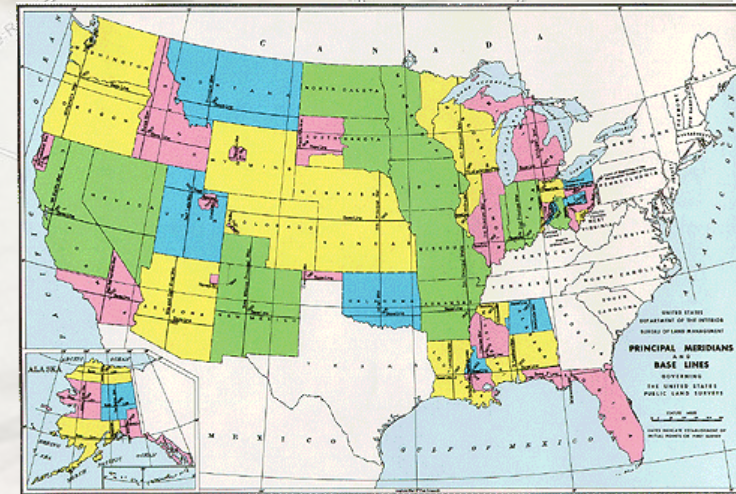
A brief look at the Stewardship Model for the Public Land Survey System

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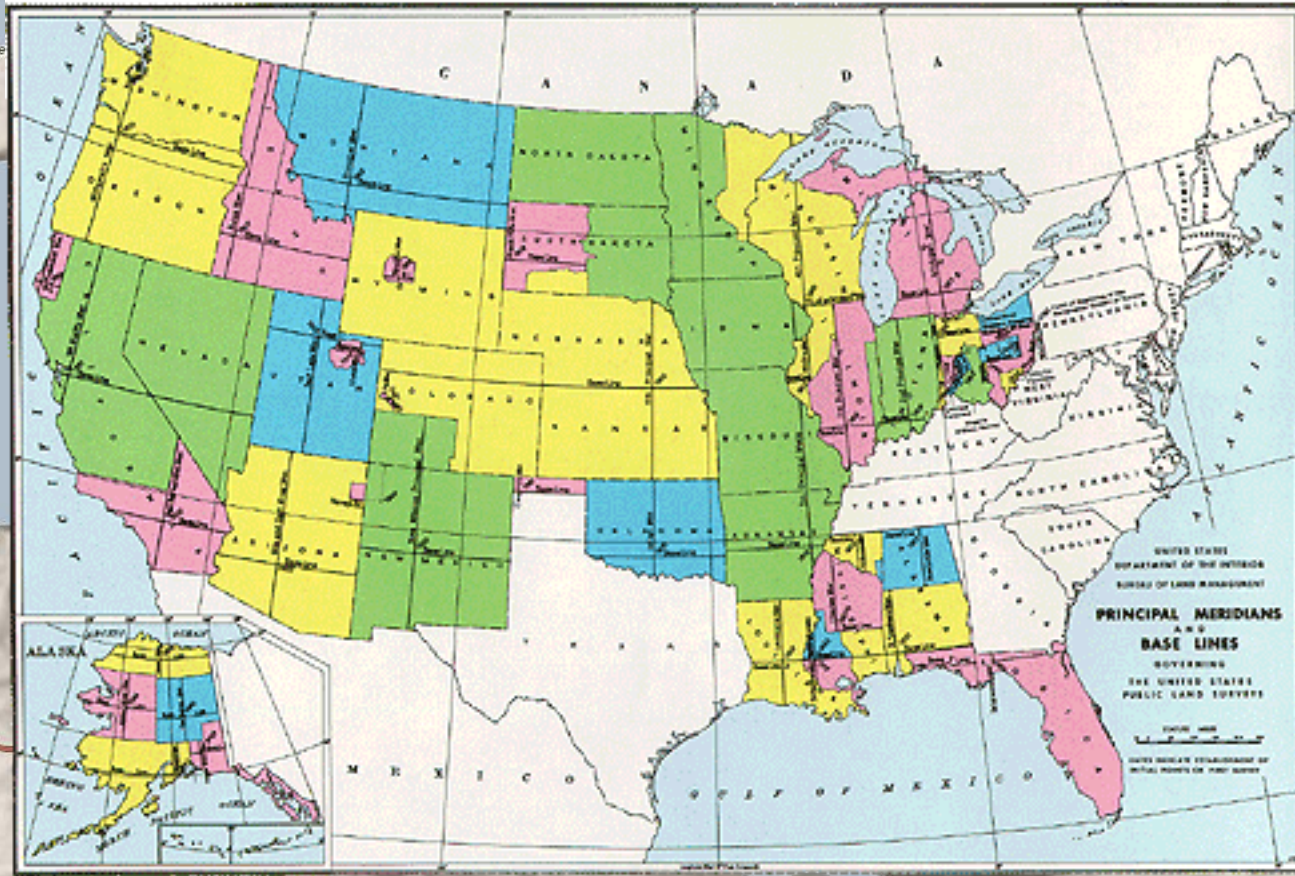
What is the PLSS?

- A system for subdividing & describing land in the US
- For many states, it's '*just*' the foundation of private land ownership
 - State Boundaries
 - Meridian Systems (origin & axes)
 - Townships (6 x 6 mile divisions)
 - Sections (1 square mile)
 - Section Divisions (Quarters, Quarter-Quarters, Special Surveys, etc)





PLSS States





Analogy: PLSS as Aerial Photography or GPS

- Precision of PLSS impacts all 'downstream' data products and uses ...
 - County Digital Parcels
 - Public/Private land boundaries
 - Public Lands Ownership, Administrative Boundaries
 - Leasing/Permitting for energy, mining, forestry, grazing, recreation
 - Valuations of federal land exchanges

PLSS Township Grid, 6 x 6 miles (Panguitch, UT)

T34 South R5 West
SL B & M

Panguitch

89

14

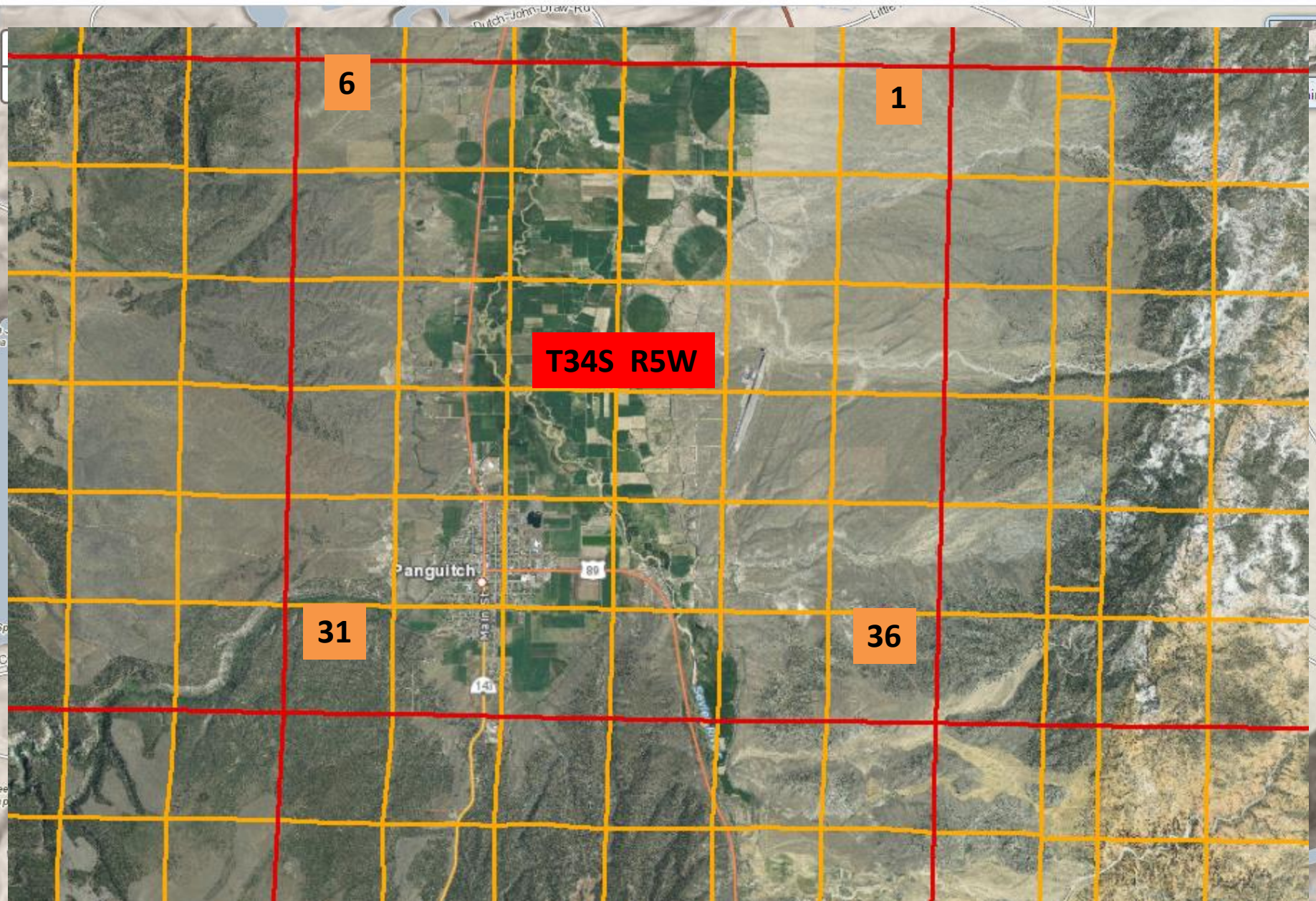
Main St

Utah River

Section Grid, 1 x 1 mile (Panguitch, UT)



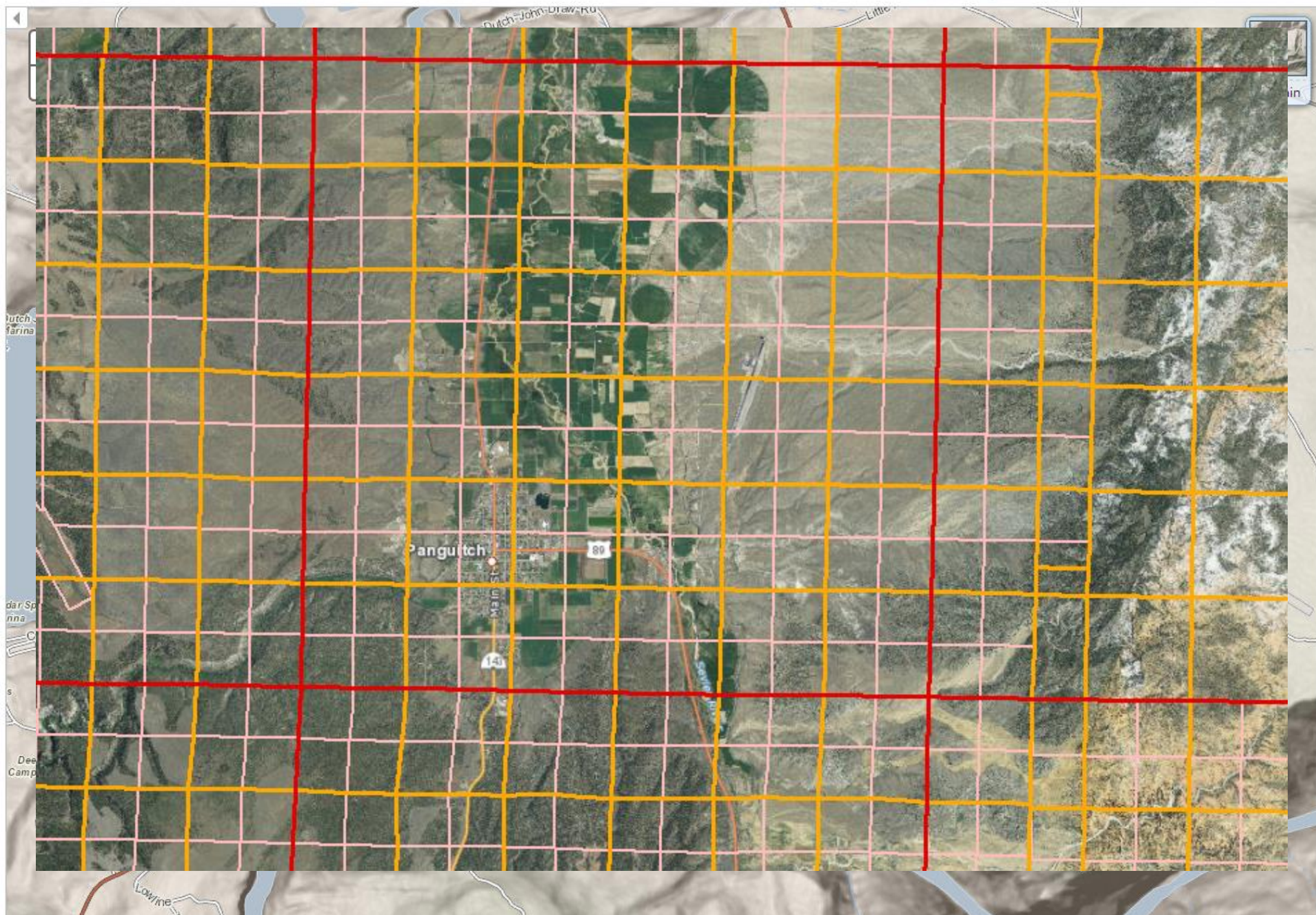
UTAH AGRC
Automated Geographic Reference Center



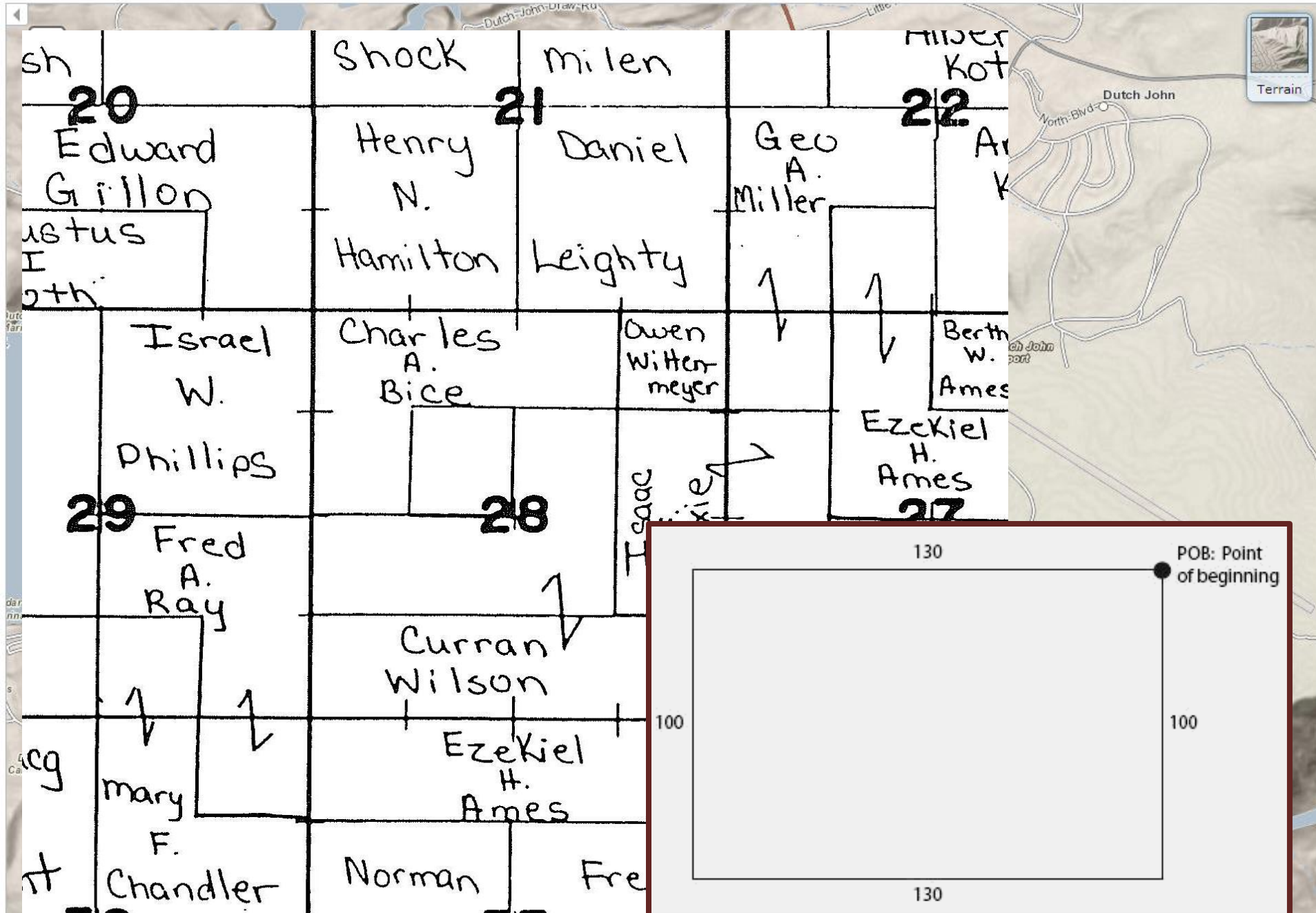
Quarter Section Grid, ½ mi x ½ mi (Panguitch, UT)



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Section Divisions & Corners: Foundation of Ownership



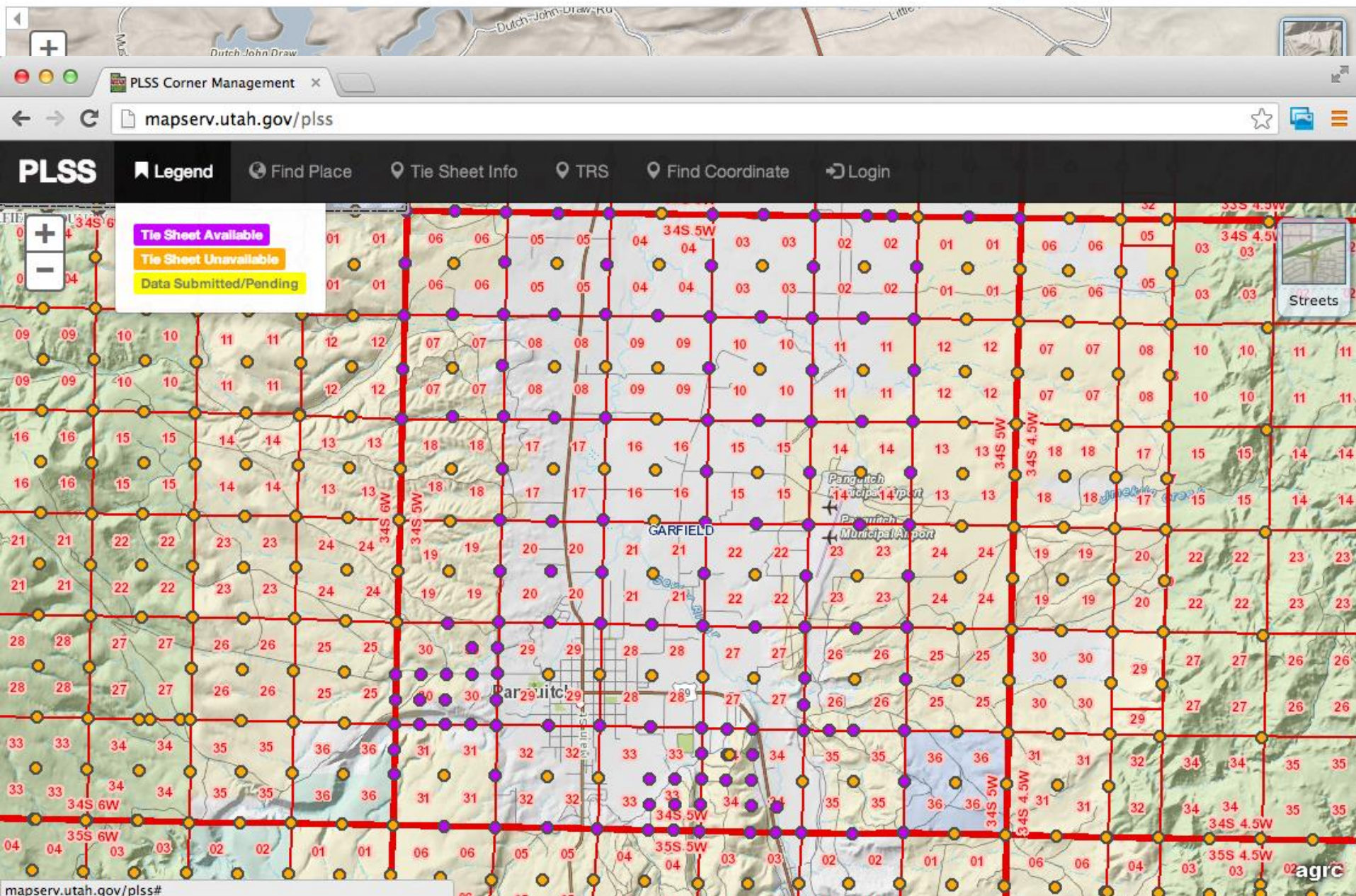
Corner Monuments



Monumented Corners



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Precision Limitations

Legend

+

PLSS Corner Points

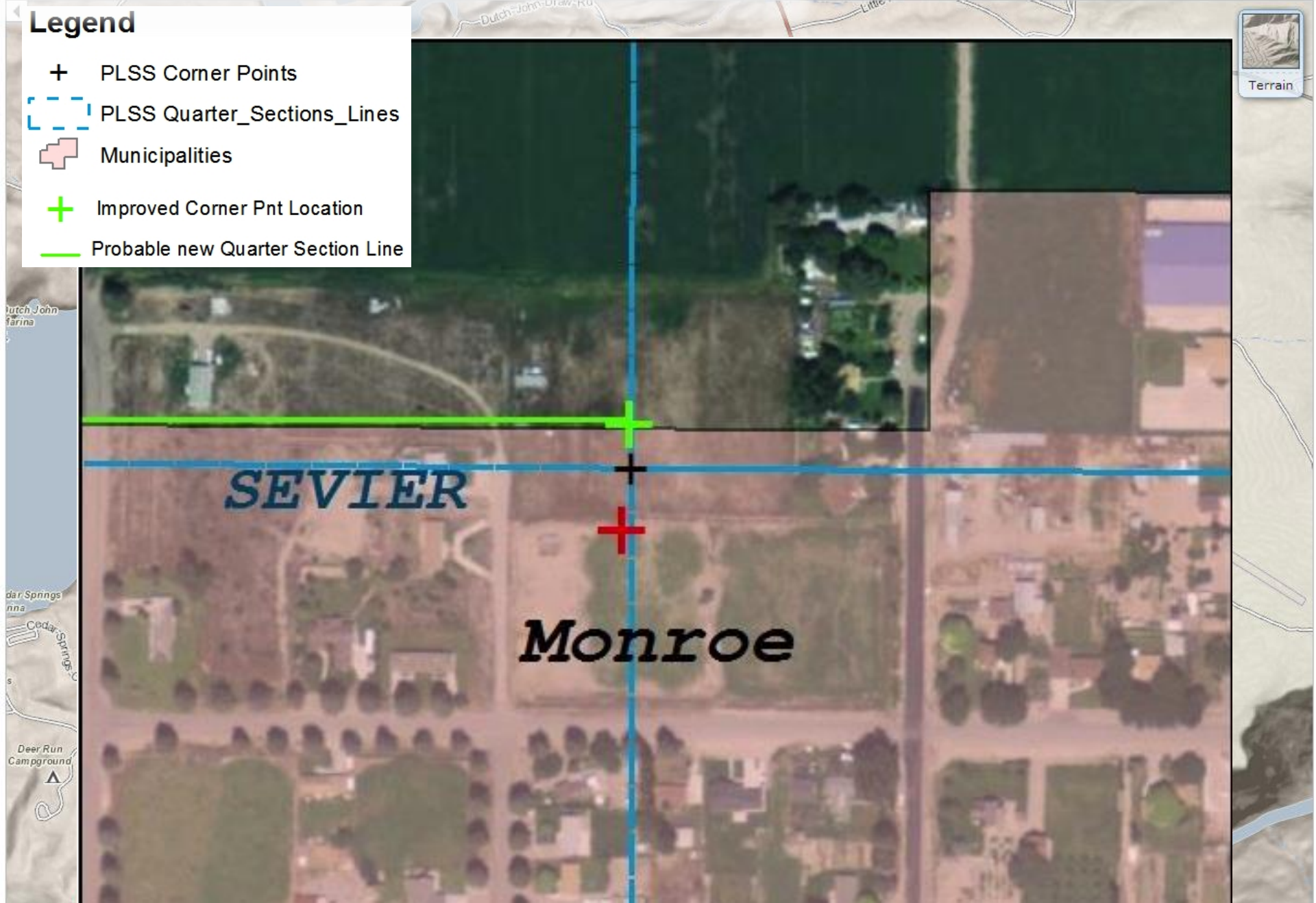
PLSS Quarter_Sections_Lines

Municipalities

+

Improved Corner Pnt Location

Probable new Quarter Section Line

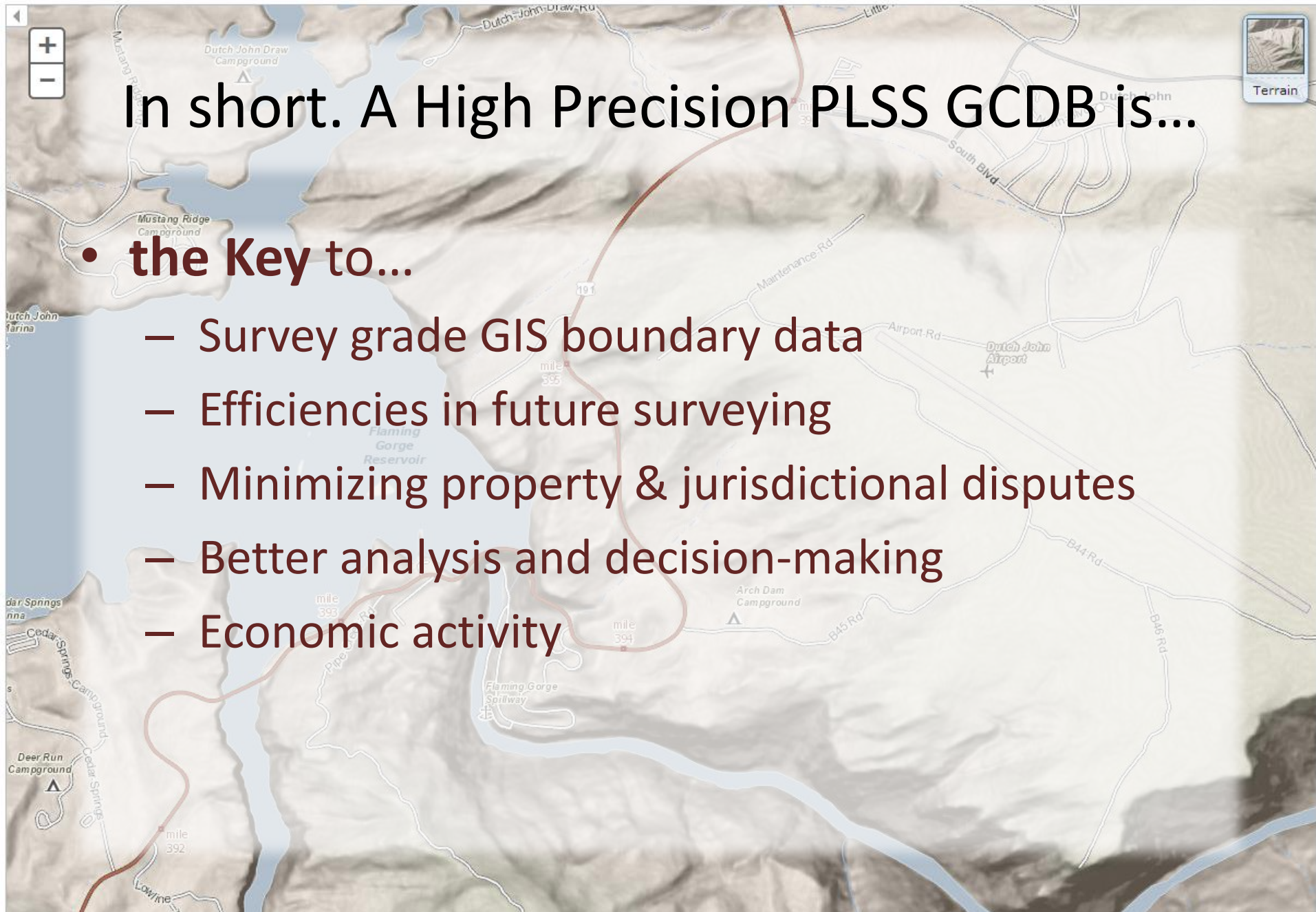




In short. A High Precision PLSS GCDB is...

- **the Key to...**

- Survey grade GIS boundary data
- Efficiencies in future surveying
- Minimizing property & jurisdictional disputes
- Better analysis and decision-making
- Economic activity



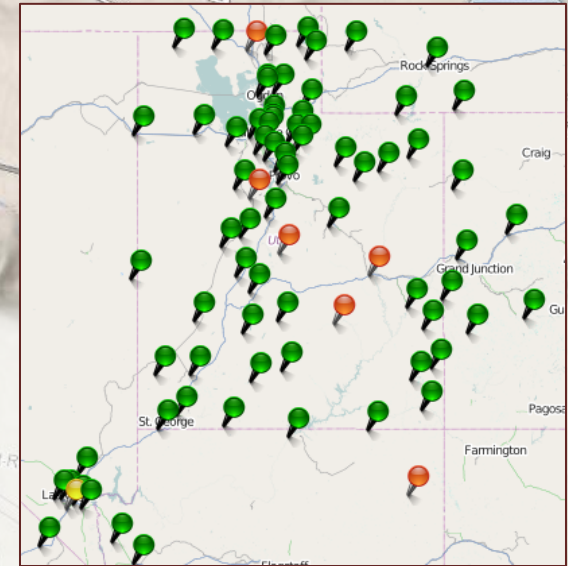


PLSS A-16 Stewardship Activities

- BLM is designated NGDA (A-16) Steward
- BLM oversees enhancement of the Geographic Coordinate Data Base (GCDB)
 - Conducts **high precision surveys** of 'corner' monuments for areas of interest on public lands
 - Contracts for **inclusion of high-precision** geographic coordinates into GCDB for surveyed corner 'monuments'
 - Contracts for **mathematical adjustments** to unsurveyed GCDB corner points
 - Seeks to **publish GCDB updates** for public use

Utah-specific activity

- County cadastral grants
 - Federal / State funding
 - Survey PLSS corner monuments
- Real-time GPS base station network (sub cm)
- Digital record of tie-sheet survey records
 - Online map for viewing and submission
- Maintenance of Public Land Ownership layer
 - Adjusted to GCDB

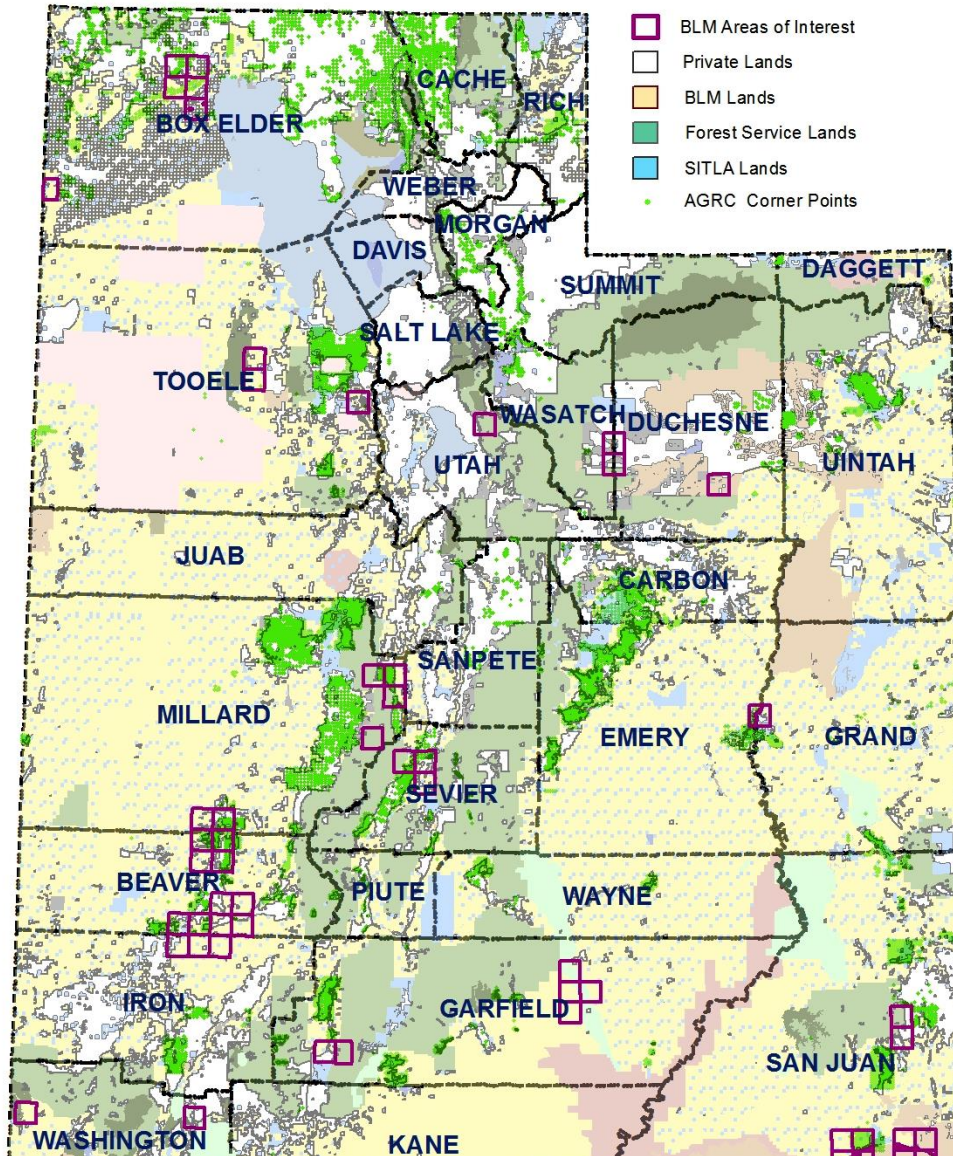


Private lands not a top GCDB priority



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2014 Areas of Interest for BLM



mapserv.utah.gov/plss → access tie sheets

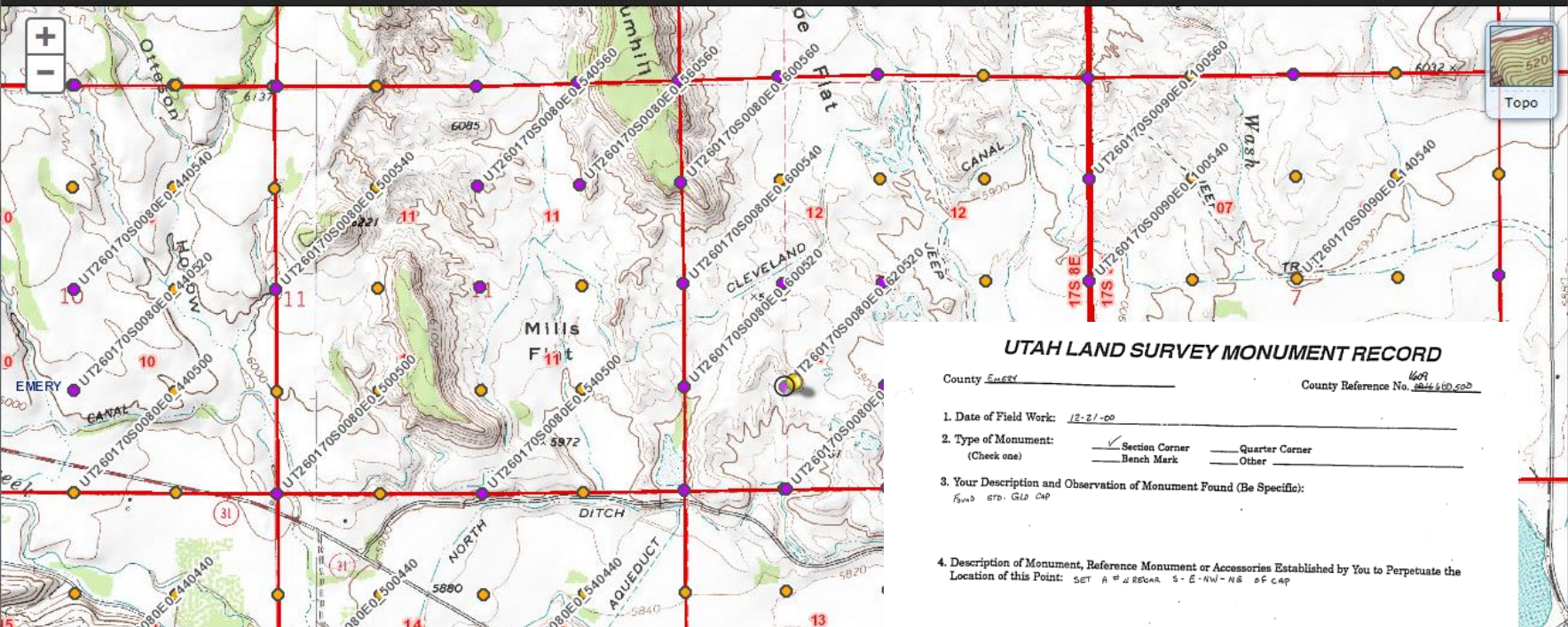
PLSS Corner Management

mapserv.utah.gov/PLSS/

PLSS Legend Find Place Tie Sheet Info TRS Find Coordinate Login

+

-



Topo

Tie Sheet Document

View tie sheet.

Elevation

Null

Corner Id

UT260170S0080E0_620520

Error North

Null

Point Lat

Null

Error East

Null

UTAH LAND SURVEY MONUMENT RECORD

County EMERY County Reference No. 4609
4609 & 10000

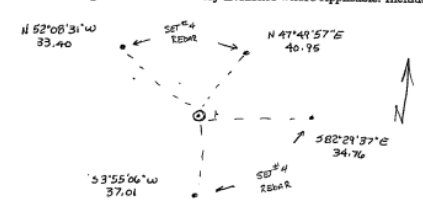
1. Date of Field Work: 12-21-00

2. Type of Monument: ☒ Section Corner ☐ Quarter Corner
(Check one) ☐ Bench Mark ☐ Other

3. Your Description and Observation of Monument Found (Be Specific):
Found STD. GLD CAP

4. Description of Monument, Reference Monument or Accessories Established by You to Perpetuate the Location of this Point: SET A # 4 REBAR S-E-NW-1/4 OF CAP

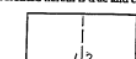
5. Sketch showing Relative Location of Monument Accessories and Two Reference Points Stating Whether Found or Set. Show Supporting and/or Contradictory Evidence where Applicable. Include North Arrow.



6. Certification:
Firm Name and/or Surveyor: JOHANSEN & TUTTLE ENG Phone: 361-2523
Address: 905 100 E CASTLE DALE UTAH

This is to certify that I was in responsible charge of the surveying work described in this record and that to the best of my knowledge the information presented herein is true and correct.

7. Location Diagram:
8. Section: 16S
9. Township: 25E



Signature: _____



Deficiencies with PLSS Stewardship

- Under-funded
 - Too much downstream GIS data is being created using imprecise GCDB corner data as foundation
 - Quality control issues
- BLM not incorporating local survey control
- Lack of input on 'areas of interest' for new surveys
 - Primary focus on BLM and Public Lands
- Nuisance mathematical adjustments = moving targets
- FGDC cadastral data model is a data transfer/exchange format, not suitable for direct use
- Uncertain future commitment

A new model...?

- BLM stewards GCDB representation of state boundaries, gathers public land corners
- State opts to maintain GCDB corner point and PLSS division layers
 - MOU for contributing/supporting partners, incl. BLM
 - Creation of a single access point for tie sheets
 - Local high precision control incorporated
 - Threshold set to exclude nuisance adjustments
- GCDB and Public Land ownership layers maintained in a single database as an integrated 'fabric'